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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,243	02/28/2004	Jun Yang	P0003/7001	8980

21127 7590 04/19/2006

KUDIRKA & JOBSE, LLP  
ONE STATE STREET  
SUITE 800  
BOSTON, MA 02109

EXAMINER

FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/789,243

Applicant(s)

YANG ET AL.

Examiner

Devona E. Faulk

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 86-95 and 110 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 93-95 is/are allowed.
- 6) ☒ Claim(s) 86 is/are rejected.
- 7) ☒ Claim(s) 87-92 and 110 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed 2/22/2006, with respect to the rejection(s) of claim(s) 86-92 under 102(b) and 103(a), with regard to the amended claim language, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 112 2<sup>nd</sup> rejections.
2. Claims 96-106 have been withdrawn and claims 1-85 have been cancelled.
3. Claims 93-9~~5~~ are in allowable form.
4. Claims 107-109 are cancelled by this amendment.
5. Claim 110 is a newly added amendment.

### ***Priority***

6. Acknowledgment is made of applicant's claim for foreign priority based on an applications filed in Singapore on 8/28/2002, 125/2002 and 8/31/2001. It is noted, however, that applicant has not filed a certified copy of the PCT/SG02/00195, SINGAPROE 200200437-2, SINGAPORE 200105345-3 AND SINGAPORE 200105344-6 applicationS as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 86** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 86 recites "wherein the amplitude and phase of said audio signal is adjusted independently from the amplitude and phase of said carrier signal". The specification teaches that there are separate gain and phase adjustment modules for audio signal and the carrier signal (page 16, lines 26-page 17, line 30 (See Figure 6). While the specification discloses separate gain and phase adjustment modules, it does not disclose that the adjusting is independent.

#### ***Claim Objections***

9. Claims 87-92 and 110 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Allowable Subject Matter***

10. **Claims 93-95** are allowed.

11. The following is an examiner's statement of reasons for allowance:

Regarding claim 93, prior art Pompei (EP 0 973 152 A2) discloses a method for steering a directional audio beam that is self-demodulated from an ultrasound carrier (abstract; Figure 1). Prior art Pompei (EP 0 973 152 A3) discloses a parametric audio system. Prior art Pompei (WO 01/52437 A1) discloses a parametric audio system. Prior

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art Redding (GB 2 121 174 A) discloses measurement of distance using ultrasound.

The prior art or combination thereof fails to disclose or make obvious performing a square root operation on the audio signal to generate a square rooted signal; alternating the gain of the square rooted signal between positive and negative gain values at selective locations to generate a flipped signal, wherein the selected locations of the signal are minimum turning points of the signal; modulating the flipped signal onto a first ultrasonic carrier wave; and offsetting the audio signal by a predetermined amount prior to performing the square root operation to ensure that the square root operation only results in real values. Therefore the prior art or combination thereof fails to disclose or make obvious a method of processing an audio signal as claimed.

Claims 94 and 95 are allowed due to their dependency on claim 93.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.


The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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VIVIAN CHIN  
SUPERVISORY POLICE EXAMINER  
TECHNOLOGY CENTER 2600